Small Business Innovation Research/Small Business Tech Transfer

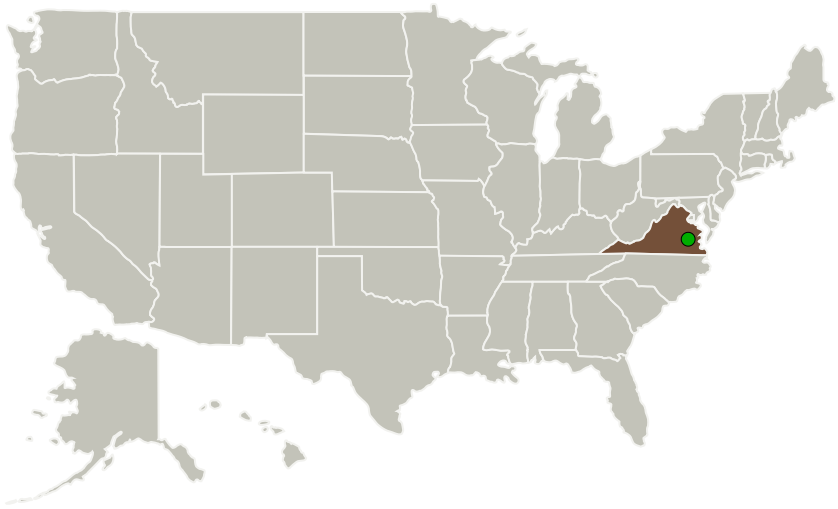
Fiber Laser Coherent Lidar for Wake-Vortex Hazard Detection, Phase II

Completed Technology Project (2010 - 2013)

Project Introduction

We propose a 1.5um fiber-optic pulsed coherent lidar as a highly effective sensor sub-system for airborne wake-vortex hazard detection. The proposed design is based on a recently developed platform at Fibertek, for fiber-optic pulsed coherent lidar capable of 6km range, and operating at high pulse rate to give high-resolution spatial map and circulation strength, characteristic of typical wake-vortex signatures. The proposed system uses all COTS 1.5um fiber-optic component technology and COTS high-speed digital electronics, to provide a cost-effective system, that is amenable to rapid transition for field testing and adoption.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Fibertek, Inc.	Lead Organization	Industry	Herndon, Virginia
Langley Research Center(LaRC)	Supporting Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations
Virginia

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Project Transitions

January 2010: Project Start

January 2013: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139006)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Fibertek, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

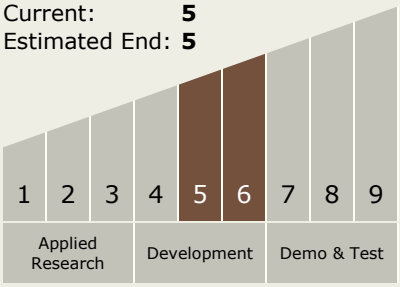
Carlos Torrez

Principal Investigator:

Shantanu Gupta

Technology Maturity (TRL)

Start: **6**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System